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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/660,209	09/12/2000	Charles W. Mitchell	1001-0135	6900

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EXAMINER

LAU, TUNG S

ART UNIT PAPER NUMBER

2863

DATE MAILED: 05/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/660,209

Applicant(s)

MITCHELL ET AL.

Examiner

Tung S Lau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13, 15, 18 and 20-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-13, 15, 18, 20, 21 and 23-27 is/are rejected.
- 7) ☒ Claim(s) 6, 22, 28 and 29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 13, 20, 23, 25, 27, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 24, 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Browning et al. (U.S. Patent 6,415,388).

Regarding claim 1:

Browning discloses an integrated circuit comprising a temperature sensor (fig. 2, unit 150) providing a temperature measurement of the integrated circuit (abstract); a programmable storage location storing a first temperature limit value, the programmable storage location accessible via an instruction executed by the integrated circuit (Col. 7, Lines 8-22, fig. 1, unit 110) ; and compare logic coupled to the temperature sensor and the storage location to provide an indication of a comparison between the temperature measurement and the first temperature limit value (Col. 2, Lines 11-29, fig. 1, unit 140, fig. 6, unit 320, 330).

Regarding claim 13:

Browning discloses a method comprising measuring a temperature of an integrated circuit with a temperature sensor (fig. 2, unit 150), the temperature sensor being a circuit within the integrated circuit (fig. 2, unit 105); comparing the measured temperature to a first limit value stored in the integrated circuit (fig. 1, unit 145); and generating a signal on a first output terminal of the integrated circuit according to the comparison to control the temperature of the integrated circuit (fig. 4, unit 205), wherein the signal is asserted when the measured temperature is greater than the first limit value (fig. 5, unit 270), and wherein the signal on the first output terminal is deasserted when a control location on the integrated circuit is accessed or when the measured temperature goes below a lower limit value, according to a programmable mode of operation (Col. 1-2, Lines 65-29).

Regarding claim 20:

Browning discloses a method comprising measuring a temperature of an integrated circuit with a temperature sensor (fig. 2, unit 150), the temperature sensor being a circuit within the integrated circuit (fig. 2, unit 150); comparing the measured temperature to a first limit value stored in the integrated circuit (fig. 5); generating a signal on a first output terminal of the integrated circuit according to the comparison to control the temperature of the integrated circuit; and accessing a control location in the integrated circuit to cause the signal to be deasserted (fig. 6, unit 320, 330, 360, 340, Col. 7, Lines 8-21) .

Regarding claim 23:

Browning discloses a method comprising measuring a temperature of an integrated circuit with a temperature sensor (fig. 2, unit 15), the temperature sensor being a circuit within the integrated circuit (fig. 2, unit 105); comparing the measured temperature to a first limit value stored in the integrated circuit (fig. 4, unit 110); and generating a signal on a first output terminal of the integrated circuit according to the comparison to control the temperature of the integrated circuit (fig. 5); comparing the measured temperature to a second limit value stored in the integrated circuit (fig. 6); and asserting a second signal on a second output terminal of the integrated circuit when the measured temperature is above the second limit value (fig. 7, unit 430, 440, 450), thereby indicating that temperature has exceeded a safe limit (fig. 7, unit 430, 440, 450, (Col. 1-2, Lines 65-29).

Regarding claim 25:

Browning discloses an apparatus comprising a processor including, means for measuring temperature of the processor and providing a measured temperature; means for comparing the measured temperature to at least two limit values; and two output terminals on the processor coupled to supply an indication of results the comparison.

Regarding claim 27:

Browning discloses a microprocessor comprising a temperature sensor providing a temperature measurement of the integrated circuit (fig. 2, unit 150); at least a first and second temperature limit value stored in programmable storage

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locations in the microprocessor (fig. 6, unit 320, Col. 7, Lines 9-21), the storage locations being accessible via software executed by the microprocessor (Col. 7, Lines 9-21, fig. 6, unit 320, fig. 2, unit 110); compare IC coupled to the temperature sensor and to the programmable storage locations storing the first and second temperature limit values (fig. 2, unit 140, 150, fig. 6, unit 320, 330), to provide respectively a first and second signal indicative of a comparison between the temperature measurement and the first and second temperature limit values (fig. 6, unit 320, 330); and first and second output terminals coupled to provide respectively, the first and second signals (fig. 6, unit 320, 330, 360, 340).

Regarding claims 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 15, 24, 26:

Browning discloses:

The integrated circuit wherein the integrated circuit asserts a first temperature control signal which is supplied on a first output terminal of the integrated circuit when the temperature measurement is above the first temperature limit value (fig. 6, unit 320, 330, fig. 3, unit 110).

The integrated circuit wherein the integrated circuit deasserts the first temperature control signal, which is supplied on the first output terminal of the integrated circuit, when the temperature measurement indicated by the temperature sensor falls below a programmable second temperature limit value (fig. 6, unit 320, 330, fig. 4, unit 140).

The integrated circuit wherein the integrated circuit deasserts the first temperature control signal, which is supplied on the first output terminal of the

integrated circuit, in response to access to a control location in the integrated circuit (fig. 6, unit 320,330, fig. 4, unit 140).

The integrated circuit wherein the integrated circuit deasserts the first temperature control signal, which is supplied on the first output terminal of the integrated circuit, when the temperature measurement falls below a programmable second temperature limit value or when a control location in the integrated circuit is accessed, according to a programmable mode of operation (fig. 6, unit 320,330, fig. 7, 420, 430, fig. 4, unit 140, Col. 7, Lines 8-22).

The integrated circuit further comprising an addressable storage location coupled to the temperature sensor (fig. 2, unit 110, 150), the addressable storage location accessible by an instruction executed the integrated circuit and supplying an indication of the temperature measurement on the integrated circuit (fig. 2, unit 110, Col. 7, Lines 8-22).

The integrated circuit further comprising a third storage location supplying a third temperature limit value (fig. 7, unit 420); third compare logic coupled to the third storage location and coupled to receive the temperature measurement (fig. 7, unit 420), and wherein the compare logic generates a third indication that the temperature measurement of the integrated circuit is below the third temperature limit value (fig. 7, unit 420, fig. 4, unit 140).

The integrated circuit wherein the integrated circuit is a microprocessor (fig. 2, unit 110, abstract).

The integrated circuit further comprising a second output terminal coupled to provide external to the integrated circuit an asserted signal when the temperature measurement indicated by the temperature sensor is above a second temperature limit value (fig. 6, unit 330, 360,340).

The method wherein the second signal is deasserted by accessing a control location in the integrated circuit (fig. 4, unit 140, fig. 6, unit 320, 330, 360, 340).

The apparatus wherein the apparatus is a computer system and further comprises at least one cooling device, which activates in response to an asserted signal on at least one of the two output terminals (fig. 6, unit 320, 330, fig. 4, unit 4).

The method wherein the asserted signal is used to inhibit a cooling device to control the temperature of the integrated circuit (fig. 6, unit 360, 340).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

a. Claims 18 and 21 rejected under 35 U.S.C. 103(a) as being unpatentable over Browning et al (U.S. Patent 6415,388).in view of Hussain et al. (U.S. Patent 6,172,611).

Browning disclose a method including the subject matter discussed above except active cooling using a fan. Hussain disclose such application to lower temperature quicker as it is well known in the art (col. 5, lines 59-65).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Browning to have the use of active cooling taught by Hussain in order to lower temperature quicker.

Claim Objections

3. Claims 6, 22, 28 and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all the limitation of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance: prior art fail to teach the use of a panic value, instruction sequence, thermostat mode operation, register controlling operation.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

4. Applicant's arguments filed 4/7/2003 have been fully considered but they are not persuasive.

A. Applicant argues that the prior art does not show the 'programmable storage location to execute the temperature control', Browning talk about the 'programmable storage location to execute the temperature control' in Col. 7, Lines 8-22, fig. Fig. 1, unit 110, 145.

B. Applicant argues that the prior art does not show the 'deassert of control signal' using temperature comparison, Browning show the 'deassert of control signal' to control the variable frequency clock source and variable supply source using the microprocessor in fig. 2, unit 110, 130 and 120, and temperature comparison in fig. 6, unit 320, 330, fig. 7, unit 420, 430.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung S Lau whose telephone number is 703-305-3309. The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 703-308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-5841 for regular communications and 703-308-5841 for After Final communications.

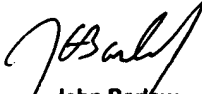
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

TC2800 RightFAX Telephone Numbers : TC2800 Official Before-Final RightFAX - (703) 872-9318, TC2800 Official After-Final RightFAX - (703) 872-9319

TC2800 Customer Service RightFAX - (703) 872-9317

TL

May 15, 2003


John Barlow
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